

## A B S T R A C T

A transmitter section radiates a short range wave to a space. A receiver section has a detector circuit composed of a branch circuit which receives a 5 reflection wave of the short range wave radiated to the space by means of the transmitter section and branches in phase a signal of the reflection wave into first and second signals, a linear multiplier which linearly multiplies the first and second signals branched in 10 phase by means of the branch circuit, and a low pass filter which samples a baseband component from an output signal from the linear multiplier. A signal processor section carries out an analyzing process of an object which exists in the space based on an output 15 from the receiver section. A control section makes a predetermined control with respect to at least one of the transmitter section and the receiver section based on an analysis result from the signal processor section.